Geophysical Research Abstracts
Vol. 13, EGU2011-7818, 2011
EGU General Assembly 2011

Correlation of distribution and evolution of selected calcareous nannofossil taxa with paleoenvironmental changes during Late Paleocene: an example in mid-latitude sediments of ODP Site 1262.

Adele Garzarella and Isabella Raffi

Dipartimento di Geotecnologie per Ambiente e Territorio (DiGAT) - CeRSGeo - Università "G. d'Annunzio" di Chieti-Pescara,Italy (a.garzarella@unich.it)

This work is part of a ongoing comprehensive study that investigates the interaction between paleoenvironment and evolution of calcareous nannofossils in different time intervals of the Cenozoic. For the Late Paleocene interval, nannofossil oozes from ODP Site 1262 are under study, recovered during ODP Leg 208 in the mid-latitude area of Walvis Ridge in the Southern Atlantic. The ODP Site 1262 record is a stratigraphycally complete Paleocene-lower Eocene sequence suitable for high resolution micropaleontological studies (e.g., Agnini and others, 2007). Here we show the preliminary results of a study focused on 1 m.yrs –interval (about 57 to 58 Ma; upper C25r to lower C24r). The analyses on nannofossil assemblages and selected taxa are providing distribution and abundance data that permits to reconstruct nannofossils ranges and evolutionary trends. Mode of evolution is described and new genera and species occurences are documented. These data, combined with geochemical proxies, will possibly unravel the biotic response to environmental changes . In fact, the documented changes in calcareous nannofossil assemblages seems somehow related to paleoenvironmental changes inferred by other proxies (δ18O and δ13C). Comparison between nannofossil abundance patterns and stable isotopes data avaliable for Site 1262 (from Zachos and others, 2010), evidences a possible and complex linkage between isotope long term variations and isotope excursion.

References:

Agnini C., Fornaciari E., Raffi I., Rio D., Röhl U., Westerhold, T., 2007. High-resolution nannofossil biochronology of middle Paleocene to early Eocene at ODP Site 1262: Implications for calcareous nannoplankton evolution. Marine Micropaleontology 64, 215–248. doi:10.1016/j. marmicro.2007.05.003

Zachos, J.C., McCarren, H., Murphy, B., Röhl, U., Westerhold T., 2010. Tempo and scale of late Paleocene and early Eocene carbon isotope cycles: Implications for the origin of hyperthermals. Earth and Planetary Science Letters 299, 242–249. doi:10.1016/j.epsl.2010.09.004